

Application No. 09/757,721
Art Unit No. 1773
Attorney Docket 00/001 MFE

Claim 1 is amended to reflect the unique results only obtainable using the masterbatch technology described therein, where during the extrusion of the film, a flame retardant dispersed in a masterbatch that has undergone rigorous drying, is admixed with the extrudate. The resulting polyester film is uniform, and the flame retardant is thoroughly distributed as observable by the film's excellent transparency. Unexpectedly, the film also has very good heat aging properties, as evidenced that accelerated heat aging does not embrittle the film. Applicants attribute the ability to form a transparent polyester flame retardant film to be directly a consequence of using masterbatch technology, where the technology employs heated vacuum drying. The unanticipatedly good heat aging properties are also attributable to the employment of the masterbatch technology.

Oishi teaches the use of epoxide groups (col. 3, line 16, col. 4, line 38, and col. 6, line 51, etc.) and other groups to modify polymeric resins (col. 16, lines 33 - 43), where the modified resins are adducted with flame retardants (col. 20, lines 57 - 67). In contrast, Applicant is not claiming / using a modified resin. Oishi does not teach the use of polyester soluble flame retardants. Oishi does not teach that masterbatch technology enables the formation of an extruded film having flame retardants, where here before the inclusion of flame retardants either resulted in an inferior film or would block the extruder altogether, such that no film was formed. Also, Oishi does not teach that the inclusion of flame retardants in combination with masterbatch technology results in a film having good heat aging properties. Applicant invention does not call for the utilization an epoxy modified compound.

Recapping, Applicant's invention attains good heat aging properties without the use of epoxy compounds, and unexpectedly even without antioxidants. This is evidence by the lack of embrittlement at 100 °C after 100 hrs.

Claims 1, 2, 3, 6, 8-11 and 14-17 were rejected in the prior application under 35 USC (a) as being unpatentable over Rakos et al. (US 6,251,505) in view of Oishi (US 5,936,048).

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The patentability of a product does not depend on its method of production. The examiner references MPEP 2113.

MPEP 2113 states in part that "Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983)"

Applicant's invention does have unobvious differences. The *unobvious* differences between Rakos and the Applicant are that using the masterbatch technology in combination with the flame retardant, the extruded film has improved heat aging as well as good mechanical and optical properties. Claim 1 (as now amended) reads on the unexpected improved heat aging. Masterbatch technology absent rigorous drying results in a film where there is yellowing, and there is a corresponding reduction in transparency. In claim 13 (amended), which reads on recycling the polyester, the result is surprising because of the enhanced heat stability that allows the film to be recycled, and therein be extruded at least twice.

The Examiner further discusses the inclusion of silica in polyester film in Rakos, as an equivalent to the inclusion of a flame retardant.

Merriam-Webster's Dictionary 10th edition defines transparency as "having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly". Rakos' film is for backlit display media, wherein at least one layer is filled with silica, therein causing diffusion. Rakos teaches away from transparent films. Therefore, Rakos is concerned that the luminous transmission may be too high, not too low. A low luminous transmission is evidently desirable as there is greater scattering. It is not obvious that removal of silica from the Rakos invention will produce a transparent film as claimed in claim 1 by the Applicant. The argument of obviousness is further weakened by

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the fact that Applicant's invention also includes a flame retardant, which potentially could lower the luminous transmission. Rakos' disclosure does not address heat aging properties. As noted in the last office action, neither Rakos (page 5, item 6) nor Peiffer produce a flame retardant film. Peiffer teaches a coextruded, biaxially oriented polypropylene film which has excellent optical properties (i.e. high gloss, low haze) that is treated with an oxidic coating (metal oxides) and/or is metallized, principally to improve its vapor barrier characteristics. While Oishi does teach the use of flame retardants, the amount is 5 - 40% by weight (col. 23, lines 47 - 48), the applicant teaches that outside this range, and in particular "An amount less than 5% wt cannot bring about the sufficient synergistic effect for improving the flame retardancy" (col. 23, lines 48 - 50). Applicant's invention can successfully utilize amounts outside the Oishi range. For instance, in Example 1, (col. 13, lines 5) the concentration of the flame retardant is 4%, and yet still passes the UL94 and DIN 4102 (B1 & B2) flammability tests. Perhaps the improved effectiveness is a consequence of utilizing the masterbatch technology or the use of hydrolysis stabilizers. In any event, Oishi does not teach these unexpected results. Applicant was unable to find a reference in either Rakos or Oishi teaching the use of vacuum dried masterbatches, as claimed in claim 1, and more robustly claimed in claim 3. It is recognized that claim 1 does not specifically read on a limited range of flame retardant and claim 6 reads on a range of 0.5 to 30.0%, where 30.0% is within the Oishi range, however, the results given in the Examples of the specification suggest that one or more other contributing mechanisms are in effect, explaining in-part the unexpected improved heat aging characteristics of the transparent polyester film. Again the Applicant asserts that the process does produce unanticipated results.

There are 17 claims pending. Claims 1, 2, 3, 7, 8 and 13 have been amended. Claims 1-17, are drawn to a polyester film, classified in class 428, subclass 480.

No new matter is included in this amendment accompanying the RCE, accordingly, entry is respectfully requested on behalf of the applicants.

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Applicant requests a two month extension of time to extend the due date from August 20, 2002 to October 20, 2002, and the appropriate fees are to be charged to Deposit Account 50-2193.

The amendment is an amendment accompanying an RCE. Appropriate fees for the RCE are also included (37 CFR 1.17(e)).

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes Made".

In view of the foregoing Amendment accompanying the RCE and the Remarks, this Application is now believed to be in condition for allowance and such favorable action is respectfully requested on behalf of Applicant.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 1 - 3 have been amended as follows:

1. (Amended) A transparent polyester film comprising:

~~a pre-dried masterbatch having a vacuum pressure of less than 80 mbar at 130°C~~
~~comprised of a polyester material and~~ at least one flame retardant which is soluble in
polyester, where said at least one flame retardant, as a dispersed component of a
masterbatch, is fed directly by an extruder during production of the film, wherein
said masterbatch had previously been dried by gradual heating at subatmospheric
pressure, with stirring; and

a polyester; and

wherein said transparent polyester film does not embrittle when exposed to
temperatures of 100°C for 100 hours.

2. (Amended) The polyester film as claimed in claim 1, wherein the ~~pre-dried~~ masterbatch
further comprises a hydrolysis stabilizer.

3. (Amended) The polyester film as claimed in claim 1, wherein the ~~pre-dried~~ masterbatch
is further dried, with stirring, at a constant elevated temperature, followed by further
drying at constant elevated temperatures and subatmospheric pressures to a lower
vapor pressure, where the vacuum pressure is less than 50 mbar at 130°C.

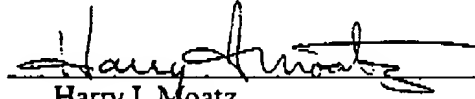
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Expires: December 5, 2002


Harry I. Moatz
Director of Enrollment and Discipline